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| APPLICATION NO.                                                                 | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/516,827                                                                      | 12/03/2004  | Katsuya Okumura      | 43521-2600          | 7091             |
| 21611                                                                           | 7590        | 03/22/2006           | EXAMINER            |                  |
| SNELL & WILMER LLP<br>600 ANTON BOULEVARD<br>SUITE 1400<br>COSTA MESA, CA 92626 |             |                      | QUASH, ANTHONY G    |                  |
|                                                                                 |             |                      | ART UNIT            | PAPER NUMBER     |
|                                                                                 |             |                      | 2881                |                  |

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                                |  |
|------------------------------|-------------------------------|--------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/516,827 | Applicant(s)<br>OKUMURA ET AL. |  |
|                              | Examiner<br>Anthony Quash     | Art Unit<br>2881               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                                              |                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/3/04</u> . | 6) <input type="checkbox"/> Other: ____                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 10, 19, 23-28, are rejected under 35 U.S.C. 102(b) as being anticipated by Nagai Takamitsu [JP 06-187901]. With respect to the claims Nagai Takamitsu [JP 06-187901] discloses an electron optical lens column characterized by comprising a column unit and an electrostatic lens disposed inside of the column, the inner surface of the column being given high-resistance electrical conductivity, the inner surface of the column being formed from a ceramic having high resistance electrical conductivity, the electrostatic lens comprising electrodes for generating electric fields on the inside of the column unit, and the electrodes being attached to the inner surface of the column unit, an electron gun chamber being provided at one end of the column unit, and the being used with an a scanning electron microscope or ion beam device. It also discloses a method of manufacturing an electron optical lens column comprising coating an electrically conductive material on the inner surface of the column, obtaining one or more electrodes for structuring an electrostatic lens through the removal of a portion of the aforementioned electrically conductive material that has been coated, and connecting the multiple electrodes to identical electric potentials. See Nagai Takamitsu

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[JP 06-187901] abstract, claims 1-2, paragraphs [0001-0012,0015-0016,0019-0021,0036], and figs. 1,4-5.

Claims 1-2,6-9,11-15,19-20,22 are rejected under 35 U.S.C. 102(b) as being anticipated by Satoh [5,719,402]. With respect to the claims, Satoh [5,719,402] discloses an electron optical lens column characterized by comprising a column unit and an electrostatic lens disposed inside of the column unit and by the fact that the inner surface of the column unit is give high-resistance electrical conductivity, the inner surface of the column being formed from a ceramic, the column having an inner column and an outer column that the column is disposed on the inside of the outer column, the electrostatic lens comprising electrodes used to produce an electric field within the column unit, the electrodes being connected to interconnections used to apply voltages to the electrodes, and the interconnections being disposed between the inner column and the outer column, electrodes with identical electric potentials being mutually connected via the interconnections, and interconnections connect together via resistance or switching elements electrodes that have different electric potentials, and a plurality of the electrostatic lenses being further characterized by the fact that electrodes equipped for each electrostatic lens comprising multiple electrode parts that mutually separate , the number of electrode parts in each of the electrodes being identical, and an electron gun chamber being provided at one end of the column unit, and a secondary electron detector being provided on the other end of the column unit. See Satoh [5,719,402] figs. 5a,6a-6b, 43,46,59, col. 1 lines 20-30,column 3,col. 5 lines 10-25, column 6, col. 7 lines 40-67, col. 11 lines 1-10, col. 15 lines 15-25.

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Claims 1,16-17, are rejected under 35 U.S.C. 102(b) as being anticipated by Nakasuji [6,125,522]. With respect to the claims, Nakasuji [6,125,522] discloses an electron optical lens column characterized by comprising a column unit and an electrostatic lens disposed inside of the column unit and by the fact that the inner surface of the column unit is given high-resistance electrical conductivity, plurality of the electrostatic lenses characterized by the fact that grooves being formed between the electrostatic lenses, and the electrostatic lens comprising an electrode, that the electrode comprises multiple electrode parts, and the grooves being formed between the electrode parts. See Nakasuji [6,125,522] abstract, figs.1-5, col. 1 lines 25-67, col. 2 lines 1-50, col. 3 lines 20-48,60-65, and col. 4 lines 10-25, 45-65.

Claims 1,21 are rejected under 35 U.S.C. 102(b) as being anticipated by Ooaeh [6,055,719]. With respect to the claims, Ooaeh [6,055,719] discloses an electron optical lens column characterized by comprising a column unit and an electrostatic lens disposed inside of the column unit and by the fact that the inner surface of the column unit is given high-resistance electrical conductivity a flange for attaching an electron gun being provided on one end of the column unit, integrated with column unit. See Ooaeh [6,055,719] abstract, fig. 3.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai Takamitsu [JP 06-187901]. With respect to the claims, Nagai Takamitsu [JP 06-187901] discloses all aspects of the claims except for explicitly stating that the column be formed from, essentially, a single material; and the resistivity of the high-resistance material being in the range of  $10^8$  to  $10^{10}$   $\Omega$ -cm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the column be formed from, essentially, a single material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. With respect to the applicants claim concerning the resistivity of the high-resistance material being in the range of  $10^8$  to  $10^{10}$   $\Omega$ -cm, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the resistivity of the high-resistance material being in the range of  $10^8$  to  $10^{10}$   $\Omega$ -cm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakasuji [6,125,522]. With respect to the claims, Nakasuji [6,125,522] teaches a manufacturing method for and electron optical lens column comprising arranging interconnections on the outer surface of an inner column unit, forming in an inner column, holes for connecting interconnections with electrodes that are disposed on the inner surface of

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the inner column, fitting an outer column onto the outside of the inner column, and forming holes on the outer column. See Nakasuji [6,125,522] abstract, figs.1-5, col. 1 lines 25-67, col. 2 lines 1-50, col. 3 lines 20-48,60-65, and col. 4 lines 10-25, 45-65. However, it does not explicitly state connecting outside circuitry. It would have been obvious to one of ordinary skill in the art to connect outside circuitry through the holes in order to ensure that the electrodes deflected the beam properly.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ooaeh [6,055,719]. With respect to the claim, Ooaeh [6,055,719] teaches an elongated member with an opening extending therethrough, the elongated member formed to reduce charge buildup, and a electrode lens positioned along the length of the opening for creating an electric field effect to focus the beam, each lens includes multiple electrode parts that are mutually separated, at least two or more electrodes parts being interconnected. See Ooaeh [6,055,719] abstract, figs. 1-3,8. However, Ooaeh [6,055,719] does not explicitly state the apparatus being formed of material to provide leakage current. Ooaeh [6,055,719] does however, teach the groove perform the equivalent function, which is to dissipate the charge buildup. See Ooaeh [6,055,719] col. 3 lines 53-62, and col. 9 lines 20-30. This is an equivalent means known in the art. Therefore, because these two means of reducing charge buildup were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the grooves in Ooaeh [6,055,719] for the material to that provides leakage current in order to reduce charge build up. With respect to applicants' claim concerning there being a plurality of electrode lenses, it would have



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been obvious to one having ordinary skill in the art at the time the invention was made to have a plurality of electrode lenses, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Nos. 6,509,568 to Ooae et al, and 5,929,452 to Yoshitake et al. are considered pertinent to the applicants' disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Quash whose telephone number is (571)-272-2480. The examiner can normally be reached on Monday thru Friday 9 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571)-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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3/20/06



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